THERMOMETRICS
A COMMITMENT TO EXCELLENCE

Outside Air Temperature Sensor (OAT)



Thermometrics Outside Air Temperature (OAT) Sensor measures the temperature outside the passenger compartment of a vehicle, and is typically mounted inside or near the front bumper or in the side mirror.

The OAT sensor relays the outside air temperature to the controller of the automatic HVAC system. The controller uses this temperature to assist in controlling the interior temperature of the vehicle.

The OAT sensor also provides the vehicle occupants with temperature readings from outside the car, which is particularly useful when driving in near freezing or freezing conditions.

Applications

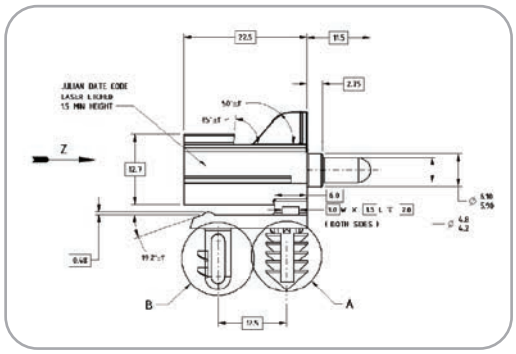
- Outside Air Temperature Measurement
- Under-hood or Outside Temperature Measurement

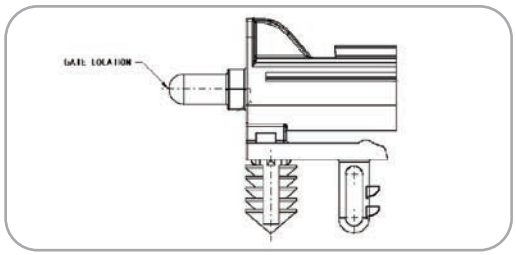
Features

- Low cost
- High sensitivity
- Wide application range
- Compact design
- Integral sealed connector
- Small size
- Single hand installation without tools
- Alternate RvT curves available
- Other resistance and beta values available
- Different geometries to meet package requirements

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Specifications

R @ 77°F (25°C)
10 KΩ ± 1.5%

B (25/85)°C
3957 – 3990

Operating Temperature
-30°C to 125°C

Storage Temperature
-40°C to 90°C

Temperature Accuracy
±0.34 @ 25°C

NTC Part Number
NDUS 7897

Response Time
Maximum 30 seconds (in air)

Housing Material
Polyamide 6/6

Weight
2.85 grams

Connector
064-S-002-1-B02

Mating Connector
Molex Part No. 31402 2500

Resistance vs. Temperature Data
Resistance = 10K Ohms at 25 °C Rtol. @ 25°C 1.50%

Temp. (°C)	Rnominal (ohms)	Res. Tol. ±%	Rmin. (Ohms)	Rmax. (Ohms)	Temp. Coef. (%/ °C)	Temp. Accy. (± °C)
-40	332776	5.95	312976	352577	6.63	0.90
-35	240264	5.50	227050	253479	6.40	0.86
-30	175427	5.07	166533	184321	6.18	0.82
-25	129449	4.65	123430	135468	5.98	0.78
-20	96481	4.24	92390	100572	5.78	0.73
-15	72592	3.84	69805	75380	5.60	0.69
-10	55109	3.46	53203	57016	5.43	0.64
-5	42193	2.71	41050	43337	5.26	0.52
0	32566	2.71	32683	33448	5.10	0.53
5	25338	2.44	24720	25956	4.94	0.49
10	19869	2.19	19433	20304	4.79	0.46
15	15695	1.95	15389	16001	4.65	0.42
20	12486	1.72	12271	12701	4.51	0.38
25	10000	1.50	9850	10150	4.38	0.34
30	8060	1.71	7922	8198	4.25	0.40
35	6536	1.91	6411	6661	4.13	0.46
40	5331	2.11	5219	5444	4.02	0.52
45	4373	2.29	4273	4473	3.91	0.59
50	3606	2.47	3517	3695	3.81	0.65
55	2989	2.66	2909	3068	3.70	0.72
60	2490	2.84	2419	2561	3.60	0.79
65	2085	3.00	2022	2147	3.51	0.86
70	1754	3.16	1698	1809	3.42	0.93
75	1482	3.31	1433	1531	3.33	0.99
80	1257	3.45	1214	1301	3.24	1.06
85	1071	3.58	1033	1110	3.16	1.13
90	916.4	3.80	881.6	951.2	3.09	1.23
95	786.9	4.00	755.4	818.3	3.01	1.33
100	678.1	4.19	649.7	706.6	2.94	1.43
105	586.5	4.29	561.4	611.7	2.87	1.49
110	509.1	4.38	486.8	531.4	2.80	1.57
115	443.3	4.48	423.5	463.2	2.73	1.64
120	387.3	4.59	369.6	405.1	2.67	1.72
125	339.5	4.69	323.6	355.4	2.61	1.80
130	298.4	4.79	284.1	312.7	2.55	1.88
135	263.1	4.89	250.2	275.9	2.49	1.96
140	232.6	5.00	220.9	244.2	2.44	2.05
145	206.1	5.11	195.6	216.7	2.39	2.14
150	183.2	5.21	173.7	192.8	2.33	2.23

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